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**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE  
BEFORE THE HONORABLE BOARD OF PATENT APPEALS AND  
INTERFERENCES**

In re PATENT APPLICATION of:

CHRISTIANSEN et al.

Group Art Unit: 3739

Appln. No.: 09/097,383

Examiner: David M. Shay

Filed: June 16, 1998

Title: LIGHT PULSE GENERATING APPARATUS AND COSMETIC AND  
THERAPEUTIC PHOTOTREATMENT

**APPEAL BRIEF**

08/02/2005 JADD01 00000105 033975 09097383  
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Date: August 1, 2005

37 C.F.R. § 41.37(c)(i) - Real Party in Interest

The real party in interest for this Appeal and the present application is Danish Dermatological Development A/S by way of an Assignment recorded in the U.S. Patent Trademark Office at Reel/Frame 9435/0734.

37 C.F.R. § 41.37(c)(ii) - Related Appeals and Interferences

There are presently no appeals or interferences known to the Appellants, the Appellants' representatives or the Assignee, which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

37 C.F.R. § 41.37(c)(iii) - Status of Claims

Claims 1-3, 8, 10-15, 18 and 22-25 are pending. Claims 13, 8, 10-15, 18 and 22-25 stand rejected and are on appeal. The claims on appeal are set forth in the attached Appendix Claim 1 is independent. Claims 2, 3, 8, 10-15, 18, and 22-25 depend from claim 1.

37 C.F.R. § 41.37(c)(iv) - Status of Amendments

A final rejection was issued on March 2, 2005. No amendments were filed after the final rejection. A personal interview was conducted on April 20, 2005. A Notice of Appeal was filed on May 31, 2005.

37 C.F.R. § 41.37(c)(v) – Summary of Claimed Subject Matter

Claims 1-3, 15 and 18 are described below, referring to the specification, drawings, and reference numerals. This description is intended to facilitate an understanding of the claims by the Board members and is not intended as a comprehensive claim construction, such as used in the context of an argument of invalidity or infringement. Any reference to more than one reference number or character for any particular claimed element or limitation is illustrative

only and is not to be construed as an admission that the claims are limited to any, or all, of the particularly disclosed embodiments.

Claim 1 recites an apparatus for pulsed light cosmetic or therapeutic photo-treatment of the human or animal body (Figures 2 and 3; page 19, line 21 – page 21, line 5), comprising a housing (Figure 2, reference number 20; page 19, line 23), a gas filled arc lamp light source (Figures 1 and 2, reference number 13; page 19, lines 2 and 23) within said housing operable to produce a pulsed light output (Figures 6(a)-(c); page 22, lines 1-29), a power supply (Figure 1, reference number 12; page 18, line 29) connected to said arc lamp light source for operation thereof to produce a light output duration of from 10 to 70 msec, a light output aperture (Figure 2 and 3, reference number 22; page 20, lines 1-2) defined by said housing, and a filter system (Figures 2 and 3, reference number 25; page 20, lines 19-27) for filtering undesired light output wavelengths from said pulse to produce a filtered light pulse for application to said body, at least part of said filter system being interposed between said light source and said aperture, wherein said filter system consists of (a) a filter for filtering out UV and near UV wavelengths shorter than 510 nm and for passing longer wavelengths and (b) water (Figures 2 and 3; page 20, lines 4-5), said water being located in the apparatus for filtering out undesired skin heating wavelengths of light which would otherwise pass to said output aperture, wherein said filtered light pulse has an energy of at least  $250 \text{ J/cm}^2/\text{sec}$ .

Claim 2 recites an apparatus as claimed in Claim 1, comprising means for defining a flow path for said water (Figures 2 and 3, reference numbers 13 and 24; page 20, lines 4-5), which means is optically transparent at least in a region in which said water acts as said filter, and means for producing a flow of said water (Figure 3, reference numbers 38 and 40; page 20, lines 7-10) through said flow path.

Claim 3 recites an apparatus as claimed in Claim 2, wherein said light source (Figures 2 and 3, reference number 13) forms part of the means defining said flow path for water, whereby said water acts both to filter said light pulse and to cool said light source.

Claim 15 recites an apparatus as claimed in Claim 13, wherein means is provided for adjusting said time-weighted average light power output (Figures 1 and 6(a)-(c); page 18, line 24 – page 19, line 19 and page 22, lines 1-24).

Claim 18 recites an apparatus as claimed in Claim 1, further comprising a filter mounting for receiving a second filter having high filtration characteristics suitable to pass only selected wavelengths of light so as to dispose said second filter in a light path from said light source which light path also includes said filter comprising water (page 20, line 24 – page 21, line 5), sensor means for detecting the presence and nature of a said second filter in said filter mounting, and interlock means for preventing operation of said light source to carry out photo-treatment except when a said second filter appropriate to an intended photo-treatment is present in said mounting and/or for providing an alarm signal if a said appropriate second filter is not present in said mounting (page 12, line 21 – page 13, line 28).

37 C.F.R. § 41.37(c)(vi) – Grounds of Rejection to be Reviewed on Appeal

The March 2, 2005 Office Action rejects claims 1 and 22 under 35 U.S.C. §102(b) over Eckhouse (U.S. Patent 5,620,478). Claims 1-3, 22 and 23 were rejected under 35 U.S.C. § 103(a) over Eckhouse in view of Gustafsson (U.S. Patent 5,320,618). Claims 10-15, 24 and 25 were rejected under 35 U.S.C. § 103(a) over Eckhouse in view of Gustafsson and further in view of Anderson et al. (U.S. Patent 5,735,844) and Optoelectronics (“High Performance Flash and Arc Lamps” from PerkinElmer). Claim 18 was rejected under 35 U.S.C. § 103(a) over Eckhouse in view of Gustafsson and further in view of Vassiliadis et al. (U.S. Patent 3,703,176). Claim 8 was not discussed in the March 2, 2005 Office Action, but as stated in

the April 20, 2005 Interview Summary, claim 8 is rejected under 35 U.S.C. § 103(a) over Eckhouse in view of Gustafsson.

37 C.F.R. § 41.37(c)(vii) – Argument

In rejecting claims as anticipated under 35 U.S.C. § 102(b) a reference must teach each and every element of the claim. According to MPEP § 2131:

A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." Verdegaal Bros. v. Union Oil Co. of California, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). "The identical invention must be shown in as complete detail as is contained in the ... claim." Richardson v. Suzuki Motor Co., 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989).

Several basis factual inquiries must be made to determine obviousness or non-obviousness of patent application claims under 35 U.S.C. § 103. These factual inquiries are set forth in Graham v. John Deere Co., 383 US 1, 17, 148 USPQ 459, 467 (1966);

Under § 103, the scope and content of the prior art are to be determined; differences between the prior art and the claims at issue are to be ascertained; and the level of ordinary skill in the pertinent art resolved. Against this background, the obviousness or non-obviousness of the subject matter is determined.

As stated by the Federal Court in In re Ochiai, 37 USPQ 2d 1127, 1131 (Fed. Cir. 1995);

[T]he test of obviousness *vel non* is statutory. It requires that one compare the claim's subject matter as a whole with the prior art to which the subject matter pertains. 35 U.S.C. § 103. The inquiry is thus highly fact-specific by design . . . When the references cited by the Examiner fail to establish a *prima facie* case of obviousness, the rejection is improper and will be overturned. In re Fine, 837 F.2d 1071, 1074, 5 USPQ2d 1596, 1598 (Fed. Cir. 1988) (Emphasis added.)

In rejecting claims under 35 U.S.C. § 103(a), an Examiner bears an initial burden of presenting a *prima facie* case of obviousness. A *prima facie* case of obviousness is established only if there is a suggestion or motivation to combine reference teachings; a

reasonable expectation of success; and the prior art references, when combined, teach or suggest all the claim limitations. If an Examiner fails to establish a *prima facie* case, a rejection is improper and will be overturned. See In re Rijckaert, 9 F.3d 1531, 28 USPQ2d 1955 (Fed. Cir. 1993). “If examination . . . does not produce a *prima facie* case of unpatentability, then without more, the Applicant is entitled to the grant of the patent.” In re Oetiker, 977 F.2d 1443, 1445-1446, 24 USPQ2d 1443, 1444 (Fed. Cir. 1992).

Claim 1 is not anticipated by Eckhouse

Eckhouse does not disclose or suggest, *inter alia*, an apparatus for pulsed light cosmetic or therapeutic photo-treatment comprising a housing, a gas filled arc lamp light source within the housing to produce a pulsed light output, and a light output aperture defined by the housing. Eckhouse also does not disclose or suggest a filter system that consists of (a) a filter for filtering out UV and near UV wavelengths shorter than 510 nm and for passing longer wavelengths and (b) water, the water being located in the apparatus for filtering out undesired skin heating wavelengths of light which would otherwise pass to the output aperture, as recited in claim 1.

During the April 20, 2005 interview, Examiner Shay stated that Eckhouse disclose in column 10, lines 4-14, that the embodiment shown in Figure 4 may be filled with fluid, for example water, for cooling the flashlamp if high repetition pulses are used. Examiner Shay also stated that Eckhouse disclose in column 10, lines 57-62, that a flat, discrete filter may be added to one end, preferably the input end, of the light guide. Examiner Shay then concluded that these disclosures by Eckhouse anticipate claim 1.

It is respectfully submitted that Eckhouse fails to anticipate claim 1 because Eckhouse does not describe or suggest, either expressly or inherently, each and every element as set forth in the claim, either in a single embodiment, or in a combination of embodiments.

The embodiment shown in Figures 1 and 2 clearly do not, and could not, include a filter system including water. The embodiment shown in Figures 1 and 2 includes an open housing which could not possibly contain water. The only embodiments of Eckhouse that disclose water are shown in Figures 4 and 8. However, the embodiments shown in Figures 4 and 8 are couplers for properly coupling light from a flashlamp to an optical fiber. See column 8, lines 54-63. These embodiments are not components of the embodiment of Figures 1 and 2 and are for use in apparatus designed for a completely different purpose, namely an invasive treatment in which light is conducted via an optical fiber to be emitted within the body. The light filtering arrangements with which the claimed invention is concerned are designed to deal with preventing unwanted heating of the skin when an external, non-invasive treatment is applied. No equivalent filtering requirement arises in relation to invasive devices where the light of course does not impinge on the skin.

The coupler 40 shown in Figure 4 includes a toroidal flash tube 42 inside a reflector 44 that collects and concentrates the light. The reflector 44 has a cross-section of substantially an ellipse. The toroidal flash tube 42 is positioned so that its minor axis coincides with the focus of the ellipse. The other focus of the ellipse is the edge of an optical fiber 46. See column 9, lines 28-37. The coupler 40 may be used with a fluid, e.g. water, filling the volume between the reflector 44 and the optical fiber 46. See column 10, lines 4-14.

This embodiment is for invasive application of light. There is no reasons why it should include filtering arrangements suitable for preventing excessive heating of the skin and, in fact, no optical filtering is discussed in relation to it.

The coupler 40 of Eckhouse does not include a housing and a light output aperture defined by the housing. As discussed above, the light from the flash tube 42 is focused on the

edge of the optical fiber 46, it is not output through an aperture in a housing, or even an aperture in the reflector 44. Therefore, Eckhouse here also does not disclose or suggest a filter system being interposed between a light source and a light output aperture and consisting of a filter for filtering out UV and near UV wavelengths shorter than 510 nm and for passing longer wavelengths and water, the water being positioned to filter out undesired skin heating wavelengths that would otherwise pass to the output aperture. Accordingly, Eckhouse cannot anticipate or render obvious claim 1.

Page 2, lines 5-7, of the March 2, 2005 Office Action states: "While applicant notes that the embodiment of Figure 4 of Eckhouse does not disclose filters, Eckhouse does mention further embodiment, which does." It is respectfully noted that there is no dispute between Appellants and the Examiner regarding the question of whether a filter is disclosed by Eckhouse in the embodiment of Figure 4; it is agreed that there is no filter disclosed in relation to that embodiment.

During the April 20, 2005 interview, Examiner Shay noted that column 10, lines 55-62, of Eckhouse discloses adding filters to the couplers shown in Figures 4 and 8. It is respectfully submitted that this is a misreading of Eckhouse. This passage does not continue the discussion of the embodiments of Figures 4 and 8. There is an intervening passage from lines 27-30 discussing, in contrast to invasive medical applications, devices for industrial or domestic use. The exact purpose of these is unclear, but it is in this context that line 31 goes on to discuss "one embodiment" having flexible or rigid light guides and line 46 goes on to discuss "an alternative embodiment" having a rectangular light guide. The passage relied on by the Examiner ending on line 55 forms part of a discussion beginning on line 51 relating to "The light guides discussed above," which would seem to be those just described for



domestic or industrial use. There is clearly no teaching to employ water in a filtering position in such devices.

Apart from the presence of the light source and the light guide, the general structure of these embodiments is not described. It cannot be assumed that the general structure is one in which water can be present. Certainly, the presence of water in these embodiments is not disclosed. Neither is the light output duration or the pulse energy disclosed in relation to these embodiments.

It is respectfully submitted, therefore, that even assuming an embodiment that incorporated this disclosure (i.e. column 10, line 58) to add a flat, discrete filter to an end, preferably the input end, of the light guide was constructed, such an embodiment would not anticipate claim 1 comprising specifically a UV cut off filter and water and would not provide the required optical parameters. The modified embodiment would also still not include a housing defining a light output aperture or a filter system as recited in claim 1.

The coupler shown in Figure 8 of Eckhouse differs from the coupler 40 only in the shape of the edge of the optical fiber 46. The embodiment of Figure 8, therefore, cannot anticipate or render obvious claim 1, either alone or in combination with any other embodiment or disclosure of Eckhouse.

Claims 1-3, 8, 22 and 23 are not obvious over Eckhouse in view of Gustafsson

Page 2, lines 20-21, of the March 2, 2005 Office Action states: "Eckhouse teaches a device as claimed except for the specific recitation of the flow path." Page 2, line 21 – page 3, line 4, of the March 2, 2005 Office Action states: "Gustafsson teaches a xenon lamp using circulating water to cool flash tubes and an optical fiber applicator with a convex tip. It would have been obvious to the artisan of ordinary skill to employ the lamp and cooling

system of Gustafsson in the device of Eckhouse, since Eckhouse gives no particular cooling system design, and since the cooling system of Gustafsson make the lamp much more effective (see column 2, line 62 to column 3, line 6), thus producing a device such as claimed.”

It is respectfully noted that claim 1 does not recite a flow path, as alleged in the Office Action. However, the Office Action’s assertion that one of ordinary skill in the art would have been motivated to combine these references is completely insufficient to support a *prima facie* case of obviousness.

The requisite standard for motivation to combine references requires a showing that one of ordinary skill in the art would have been motivated to combine the references not that they may have combined the references. Under MPEP 2143, to establish a *prima facie* case of obviousness, three basic criteria must be met. Primarily, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. The initial burden is on the examiner to provide some suggestion of the desirability of doing what the inventor has done. “To support the conclusion that the claimed invention is directed to obvious subject matter, either the references must expressly or impliedly suggest the claimed invention or the examiner must present a convincing line of reasoning as to why the artisan would have found the claimed invention to have been obvious in light of the teachings of the references.” *Ex parte Clapp*, 227 USPQ 972, 973 (Bd. Pat. App. & Inter. 1985).

One of ordinary skill in the art would not have looked to Gustafsson for the reason hypothesized by the Office Action. The Office Action asserted that it would have been obvious to employ the water cooling of Gustafsson in a device of Eckhouse, because this ‘makes the lamp much more effective’. However, that is not a teaching of Gustafsson. In fact, Gustafsson fails to teach or suggest that water cooling makes lamps more effective.

Rather, Gustafsson teaches that the whole construction of the embodiment of Figure 2 of Gustafsson makes the illustrated device more effective than that of Figure 1. The water cooling is not what is taught to improve efficiency; rather, the Gustafsson teaches that the entire set of constructional differences between the two embodiments is what improves efficiency. In fact, the main difference between Figures 1 and 2 of Gustafsson is not the cooling, but rather the use of a dye in circuit 7 to convert the light output to a single wavelength. This is explained clearly to be what makes the lamp of Figure 2 more effective.

Furthermore, the Office Action has overstated the message that one of ordinary skill in the art would have derived from Eckhouse. In fact, the teaching regarding any cooling function of water in relation to the device of Figure 4 is rather incidental. The real importance of the water is to couple the light of the lamp to the optical fibre end. Thus it is stated in column 10, lines 8-14, of Eckhouse that:

*'The presence of a fluid reduces the losses that are associated with glass to air transitions...If a fluid is used in the reflector volume, then its refractive index can be chosen such that all the rays trapped in the conical section are also trapped in the fiber...'*

Water is suggested by Eckhouse to have a useful cooling function on *'if high repetition rate pulses are used'*. However, high repetition rates are not used in the apparatuses of the kind described by Eckhouse or the Applicant in relation to skin treatment embodiments. To the contrary, skin treatments do not require fast repetition of pulses; once a pulse has been applied to one area of skin, the clinician or operator moves the device to another area. Therefore, in skin treatment regimens, there is ample time for cooling.

Thus, the message that one of ordinary skill in the art takes from the omission of any form of cooling in the embodiment of Figure 1 of Eckhouse, which is the embodiment that most resembles the claimed invention in its purpose, is that even though Eckhouse is aware of the possibility of using cooling where required (see column 10 in relation to Figure 4),

Eckhouse sees no need to provide cooling at all in relation to apparatus designed to carry out pulsed light treatment via the skin.

Moreover, whereas in Gustafsson and Eckhouse Figure 4, the lamps and their cooling system are in a large fixed unit and light is conducted to the patient via a fibre, this is not the case in those embodiments of Eckhouse for which UV cut off filtering is taught to be appropriate. Thus, the devices of Figures 1 and 2 and 14-16 have the lamp in an applicator which is directly applied to the patient's skin. Column 8, line 44, recommends that the applicator should be a lightweight unit. A skilled worker would, therefore, need a strong motivation to try to incorporate water cooling into such a hand held device.

This motivation is lacking as Eckhouse does not suggest that cooling is a useful gain from the use of water in the embodiment of Figure 4, except where a high pulse repetition rate is needed. No such high pulse repetition rate is indicated to be required in connection with the embodiments featuring the UV cut off filter. Therefore, a skilled worker would not have been motivated to combine the features of the embodiments of Eckhouse, which have a UV cut off filter with either the use of water for cooling shown in connection with Figure 4 or the water cooling of Gustafsson.

With respect to claims 2, 3 and 8, Gustafsson fails to remedy the above-identified deficiency of Eckhouse. Gustafsson merely discloses a low cost, prior art device for treating of superficial afflictions using a directed light beam produced by a non-coherent light source. Moreover, contrary to the assertions of the Office Action, Gustafsson fails to teach or suggest the claimed flow path for the water. If one of ordinary skill in the art would have adopted the flow path as in Gustafsson, the water would not function as an optical filter for the light output. This is because the water is not interposed in a light path from the lamp to the outside world. In Gustafsson, the light emitted by the lamp is stopped by the fluorophore and is re-emitted along a new path to exit via the optical fibre.

With respect to claims 22 and 23, Eckhouse and Gustafsson both fail to disclose or suggest a gas-filled arc lamp and wherein the gas-filled arc lamp is a xenon or krypton lamp.

Claims 10-15, 24 and 25 are not obvious over Eckhouse in view of Gustafsson, Anderson et al. and Optoelectronics

Anderson fails to remedy the above-identified deficiencies of Eckhouse and Gustafsson. Anderson merely discloses a method and apparatus for the simultaneous removal of hairs from a skin region by placing an applicator in contact with the skin surface in the skin region and applying optical radiation of a selected wavelength and of a selected flux through the applicator to the skin region for a predetermined time interval. The Anderson technique also involves cooling the skin surface in the skin region to a selected depth during the applying of optical radiation to the skin region and/or prior thereto, which allows the papilla of the hair follicles to be significantly heated without damage to the skin surface in the skin region up to the selected depth.

The Anderson applicator is utilized to cool the skin surface in the skin region to the selected depth and the selected depth is preferably at least equal to the depth of the epidermis layer of the skin (i.e. the layer of the skin closest to the skin surface). The cooling by the applicator may for example be accomplished by cooling at least the surface of the applicator in contact with the skin surface, such cooling preferably being accomplished both before and during the irradiation of the skin. The cooling of the applicator is accomplished by passing a cooling fluid through the applicator.

However, the combined teachings of Eckhouse and Gustafsson and Anderson fail to teach or suggest the claimed invention including the claimed filter system, at least part of said filter system being interposed between said light source and said aperture, as recited in independent claim 1 and dependent claims 10-15, 24 and 25.

Optoelectronics fails to remedy the above-identified deficiencies of Eckhouse, Gustaffson and Anderson. Optoelectronics merely discloses particulars of power supply construction. Therefore, the combined teachings of Eckhouse, Gustaffson, Anderson and Optoelectronics fail to teach or suggest the claimed invention including the claimed filter system, at least part of said filter system being interposed between said light source and said aperture, as recited in independent claim 1 and dependent claims 10-15, 24 and 25.

Claim 18 is not obvious over Eckhouse in view of Gustafsson and Vassiliadis et al.

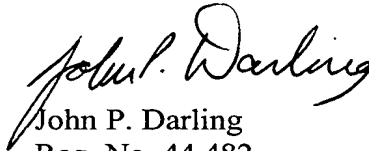
Vassiliadis fails to remedy the above-identified deficiencies of Eckhouse, Gustaffson, Anderson and Optoelectronics. Vassiliadis merely discloses the use of interlocks on filters. Therefore, the combined teachings of Eckhouse, Gustaffson, Anderson, Optoelectronics and Vassiliadis fail to teach or suggest the claimed invention including the claimed filter system, at least part of said filter system being interposed between said light source and said aperture, as recited in independent claim 1 and dependent claim 18.

Conclusion

For at least the reasons discussed above, it is respectfully submitted that: 1) claims 1 and 22 are not anticipated under 35 U.S.C. § 102(b) by Eckhouse; 2) claims 1-3, 8, 22 and 23 are not obvious under 35 U.S.C. §103(a) over Eckhouse in view of Gustafsson; 3) claims 10-15, 24 and 25 are not obvious under 35 U.S.C. § 103(a) over Eckhouse in view of Gustafsson, Anderson et al. and Optoelectronics; and 4) claim 18 is not obvious under 35 U.S.C. § 103(a) over Eckhouse in view of Gustafsson and Vassiliadis et al. Appellants respectfully request this Honorable Board to reverse the rejection of these claims and direct that the claims be passed to issue.

Respectfully submitted,

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Attachment:  
Claims appendix

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37 C.F.R. § 41.37(c)(viii) - Claims appendix

1. Apparatus for pulsed light cosmetic or therapeutic photo-treatment of the human or animal body, comprising a housing, a gas filled arc lamp light source within said housing operable to produce a pulsed light output, a power supply connected to said arc lamp light source for operation thereof to produce a light output duration of from 10 to 70 msec, a light output aperture defined by said housing, and a filter system for filtering undesired light output wavelengths from said pulse to produce a filtered light pulse for application to said body, at least part of said filter system being interposed between said light source and said aperture, wherein said filter system consists of (a) a filter for filtering out UV and near UV wavelengths shorter than 510 nm and for passing longer wavelengths and (b) water, said water being located in the apparatus for filtering out undesired skin heating wavelengths of light which would otherwise pass to said output aperture, wherein said filtered light pulse has an energy of at least 250 J/cm<sup>2</sup>/sec.
2. Apparatus as claimed in Claim 1, comprising means for defining a flow path for said water, which means is optically transparent at least in a region in which said water acts as said filter, and means for producing a flow of said water through said flow path.
3. Apparatus as claimed in Claim 2, wherein said light source forms part of the means defining said flow path for water, whereby said water acts both to filter said light pulse and to cool said light source.
8. Apparatus as claimed in claim 2, wherein said flow path forms a closed circuit around which said water circulates.
10. Apparatus as claimed in Claim 1, further comprising a light guide for transmitting light output from said light source to a treatment site, said light guide having a proximal end receiving light from said aperture and having a distal end for contacting the skin of a patient for said photo-treatment, said light guide distal end being shaped in a convex curve whereby



pressing the light guide gently against the skin of the patient reduces the amount of blood in the skin below the light guide.

11. Apparatus as claimed in Claim 10, wherein said light guide is shaped as a parallelepipedic prism with a bull-nosed projection on said distal end.

12. Apparatus as claimed in Claim 1, further comprising a light guide for transmitting light output from said light source to a treatment site, said light guide having a proximal end receiving light from said aperture and having a distal end for contacting the skin of a patient for said photo-treatment, said light guide distal end being shaped in a concave manner whereby to relieve pressure applied to the skin by the light guide in regions where blood is a target of said light output.

13. Apparatus as claimed in Claim 1, further comprising a power supply connected to the light source for providing power input to the light source, wherein said power supply is operable to provide a power output pulse or pulse train to drive said light source to produce said light output pulse or pulse train, during which light output pulse or pulse train for at least 80% of the light output period (i.e. the duration of a single pulse or the aggregate of the duration of the pulses within a pulse train excluding intervals between pulses) the light power output is from 75 to 125% of the time-weighted average light power output during the light output period.

14. Apparatus as claimed in Claim 13, wherein for at least 90% of the light output period the light power output is from 75 to 125% of the time-weighted average light power output during the light output period.

15. Apparatus as claimed in Claim 13, wherein means is provided for adjusting said time-weighted average light power output.

18. Apparatus as claimed in Claim 1, further comprising a filter mounting for receiving a second filter having high filtration characteristics suitable to pass only selected wavelengths

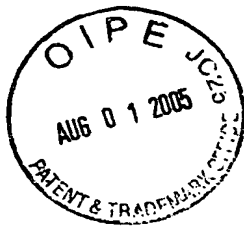
of light so as to dispose said second filter in a light path from said light source which light path also includes said filter comprising water, sensor means for detecting the presence and nature of a said second filter in said filter mounting, and interlock means for preventing operation of said light source to carry out photo-treatment except when a said second filter appropriate to an intended photo-treatment is present in said mounting and/or for providing an alarm signal if a said appropriate second filter is not present in said mounting.

22. Apparatus as claimed in claim 1, wherein the light source comprises a gas-filled arc lamp.

23. Apparatus as claimed in Claim 22, wherein said gas-filled arc lamp is a xenon or krypton lamp

24. Apparatus as claimed in claim 13, wherein the power supply is coupled to a capacitor, a charging circuit adapted for charging the capacitor to a preselected voltage, a resistor in series between said capacitor and said light source and a discharge switch operable to change from a non-conductive state to a conductive state to cause said capacitor to discharge said light source and back to said non-conductive state again.

25. Apparatus according to Claim 24, wherein the light source is an arc lamp and the power supply comprises a simmer generator adapted for feeding the arc lamp with power at a level which is sufficient to keep the arc in the conductive state.



PTO/SB/17 (12-04)  
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U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

Effective on 12/08/2004. Fees pursuant to the Consolidated Appropriations Act. 2005 (H.R. 4818).		<b>Complete if Known</b>	
<b>FEE TRANSMITTAL for FY 2005</b>		Application Number	09/097,383
		Filing Date	June 16, 1998
		First Named Inventor	KARE CHRISTIANSEN
		Examiner Name	David M. Shay
		Art Unit	3739
<input checked="" type="checkbox"/> Applicant claims small entity status. See 37 CFR 1.27	Attorney Docket No.	011765-0254781	
TOTAL AMOUNT OF PAYMENT	(\$)	250	

<b>METHOD OF PAYMENT</b> (check all that apply)							
<input type="checkbox"/> Check <input type="checkbox"/> Credit Card <input type="checkbox"/> Money Order <input type="checkbox"/> None <input type="checkbox"/> Other (please identify): _____							
<input checked="" type="checkbox"/> Deposit Account		Deposit Account Number: 033975	Deposit Account Name: See 1 in Addendum				
For the above-identified deposit account, the Director is hereby authorized to: (check all that apply)							
<input checked="" type="checkbox"/> Charge fee(s) indicated below		<input type="checkbox"/> Charge fee(s) indicated below, except for the filing fee					
<input checked="" type="checkbox"/> Charge any additional fee(s) or underpayment of fees(s) under 37 CFR 1.16 and 1.17		<input checked="" type="checkbox"/> Credit any overpayments					
WARNING: Information on this form may become public. Credit Card information should not be included on this form. Provide credit card information and authorization on PTO-2038.							
<b>FEE CALCULATION</b>							
<b>1. BASIC FILING, SEARCH, AND EXAMINATION FEES</b>							
Application Type	FILING FEES		SEARCH FEES		EXAMINATION FEES		Fee Paid (\$)
	Fee (\$)	Small Entity Fee (\$)	Fee (\$)	Small Entity Fee (\$)	Fee (\$)	Small Entity Fee (\$)	
Utility	300	100	500	250	200	100	_____
Design	200	100	100	50	130	65	_____
Plant	200	100	300	150	160	80	_____
Reissue	300	150	500	250	600	300	_____
Provisional	200	100	0	0	0	0	_____
<b>2. EXCESS CLAIM FEES</b>							
Fee Description							Small Entity Fee (\$)
Each claim over 20 or, for Reissues, each claim over 20 and more than in the original patent							50
Each independent claim over 3 or, for Reissues, each independent claim more than in the original patent							200
Multiple dependent claims							360
Total Claims - 20 or HP = _____							_____
HP = highest number of total claims paid for, if greater than 20							_____
Indep. Claims - 3 or HP = _____							_____
HP = highest number of independent claims paid for, if greater than 3							_____
<b>3. APPLICATION SIZE FEE</b>							
If the specification and drawings exceed 100 sheets of paper, the application size fee due is \$250 (\$125 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).							
Total Sheets - 100 = _____							_____
Extra Sheets /50= _____							_____
Number of each additional 50 or fraction thereof (round up to a whole number) x 125.00 = _____							_____
<b>4. OTHER FEE(S)</b>							
Non-English Specification, 130 fee (no small entity discount)							_____
Other: Appeal Brief							250.00

<b>SUBMITTED BY</b>			
Signature	<i>John P. Darling</i>	Registration No. (Attorney/Agent)	44482
Name (Print/Type)	John P. Darling	Telephone	703905.2045
		Date	August 1, 2005

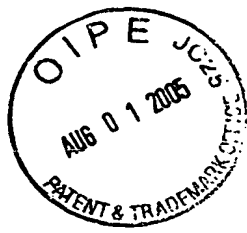
This collection of information is required by 37 CFR 1.136. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 30 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.



## Addendum

1. PILLSBURY WINTHROP SHAW PITTMAN LLP



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